

ANNEX F UNIT OF ACTION VIGNETTES

This section is comprised of six vignettes that discuss Future Combat System equipped Unit of Action tactical operations in entry operation, operational maneuver by air, combined arms operation for urban warfare to secure portion of major urban area, rapid advance to enemy center of gravity, dismounted air mechanized enabled by mounted formation in restricted terrain, dismounted operations to conduct raid on decisive point in jungle and high-end stability operations. The purpose of these scenarios, in the context of combat development, is to develop requirements (and thus required capabilities), seek new tactical concepts, as well as organizational design principles.

1.1 ENTRY OPERATIONS

BACKGROUND

In 2014¹, twenty years of independence for the Trans-Caucasus States found serious socio-political, ethno-religious, and economic conflict spreading throughout the region. Azerbaijan emerged as the leading economic power through the exploitation of



Figure 1

¹ NOTE: These vignettes provide a construct for the purpose of discussing tactical operations for employing the FCS-equipped Unit of Action as part of a joint campaign. They are presented for illustrative purposes only and are cast incidentally in the trans-Caucasus region to account for the realistic, tough range of variables and conditions, as well as the difficulty of the tactical dilemmas presented. Coincidentally, realization of the rich oil capacity of this region and the long-standing fault lines of bitter ethnic rivalry dating back a millennia are considered in scenario design. At the foundation of capabilities-based development work is the need to frame the UA in a tough set of variables so that when Objective Forces are committed by future National Command Authorities, they are assured of overmatching qualities. One this is for sure in past modeling – we have rarely been able to predict the next MCO. But we cannot get it so wrong that soldiers are not at operational risk. These vignettes are snapshots of the UA employed in combat operations, as it would conduct tactical operations given five distinct missions. These vignettes do not portray the conduct of a unified campaign. This would be the purview of the UA's higher headquarters at the Unit of Employment and joint echelonment of C2.

23 Caspian and Central Asian oil reserves. Azerbaijan's politics were deeply
24 divided; its citizens and Karabakh refugees demanded the government take
25 military action against the Armenian Karabakh that forced them to flee. The
26 Azerbaijani government refused to act, and refugees from the Nagorno-
27 Karabakh Internal Liberation Organization [NKILO], using terror and
28 armed force to achieve their goals, began a cross-border unconventional
29 campaign designed to force a confrontation between the two countries.
30 Observing these developments, Armenia and Iran viewed the Azerbaijani
31 government's instability as an opportunity to expand their influence in the
32 region for political gain. Armenia began massing maneuver forces along the
33 Azerbaijani border and repositioned mobile Theater Ballistic Missile
34 launchers. Both countries perceived a low risk of failure in executing their
35 campaign strategy and were willing to impose a military solution upon "the
36 Azerbaijani problem."

37 In November 2014, initial reports of the Caspian Sea Peninsula crisis
38 caused the U.S. to take steps to improve its awareness of the developing
39 situation. The Secretary of Defense redirected intelligence assets to focus on
40 the region and directed political and military planners to formulate
41 contingency plans for U.S. engagement in the region. They determined an
42 Army Objective Force Unit of Employment², operating as the Army
43 component of a joint force, would be required to accomplish U.S. goals in the
44 region and assigned operational control of the 15th Division air-ground task
45 force to USEUCOM for planning purposes. Warning orders were issued
46 through USEUCOM to the U.S. 15th Division air-ground task force, and
47 supporting attack and lift aviation assets to begin their own planning. US
48 Army Europe (USAREUR) and its theater support command (TSC) reviewed
49 and updated contingency plans and refined the sustainment preparation of
50 the theater. The TSC issued warning orders and created a provisional
51 logistics / sustainment task organization called the Area Support Group
52 (ASG) that would support land forces employed in theater.

² Units of Employment are highly tailorable, higher-level echelons that integrate and synchronize Army forces in larger formations for full spectrum operations. They participate in all phases of joint operations from initial entry to conflict termination, in any form of conflict and operating environment. Organizationally, the UE consists of a fixed, multifunctional HQ nucleus, plus a small, standard base of subordinate commands. The relatively small and simple organization facilitates rapid deployment for immediate response to contingencies, yet provides an appropriate base of essential and habitual capabilities that is very tailorable to accept equally rapid augmentation. This baseline can then be expanded into a larger formation through mission tailoring with additional combat formations or enablers per the specific requirements of each contingency. At the operational level, the UE is capable of commanding and controlling all Army, joint and multinational forces.

53 In late November, the Azeri Islamic Brotherhood (AIB), a coalition of
54 anti-government factions supported by NKILO and ANFAR military forces,
55 subverted the bulk of an Azeri Motorized Rifle Brigade, which mutinied to
56 realign with this faction. The brigade seized control of most of the
57 historically significant Icheri Sheher (Inner Town) district in Baku but a
58 desperate defense by loyal government forces managed to secure the centers
59 of government within the capitol city. Meanwhile, two armed clan-based
60 factions of the Azeri Islamic Brotherhood, the Aziz and Daha, extended their
61 control of the eastern and western outskirts of Baku and intensified their
62 efforts to overthrow the legitimate government.

63 As a last resort, the Azerbaijani government requested assistance from
64 the Russian Federation to defeat the insurgents and preclude an anticipated
65 invasion by Armenian forces. On 15 December, Russia proposed a coalition of
66 U.S. and Russian forces to restore order within Azerbaijan and stabilize the
67 government. Two days later, the U.S. agreed to the proposal and the two
68 nations created a coalition force and outlined its employment plan. The joint
69 force commander, United States European Command (USEUCOM), and his
70 Russian counterpart formed a coalition staff that included a coalition / joint
71 theater logistics management element (C/JTLME). The C/JTLME continued
72 to develop plans to logistically support coalition forces employed in theater
73 and to determine the most efficient use of all coalition movement,
74 sustainment, and facilities assets.

75 United States European Command focused its main effort at
76 developing the situation and expanding the knowledge base already resident
77 from the Operational Net Assessment of this region, prepositioning
78 incremental force packages to establish a military presence in the region and
79 deter any further hostilities, establishing a C4ISR architecture, and
80 posturing to project forces directly into Azerbaijan and to dismantle
81 Armenian C4ISR and fires systems. The combatant commander deployed
82 Special Operations Forces (SOF) into the region, adding an additional layer
83 of intelligence collection assets to the national-level space and air-based
84 assets already operating over the region. Initially, their efforts were focused
85 on developing the situation in the region of the beleaguered government in
86 Baku. But as the 15th Division matured its plans SOF teams shifted to
87 provide coverage of the airfields the 15th Division planned to use as tactical
88 points of entry for its brigade-sized Units of Action (UA).

89 The wealth of information being collected was processed into usable
90 intelligence and, through an integrated C4 network, distributed to all forces
91 involved in the planning phase of the operation. In the 15th Division
92 Headquarters and its Units of Action, the steady stream of real-time
93 intelligence information was fused with other information on the operational

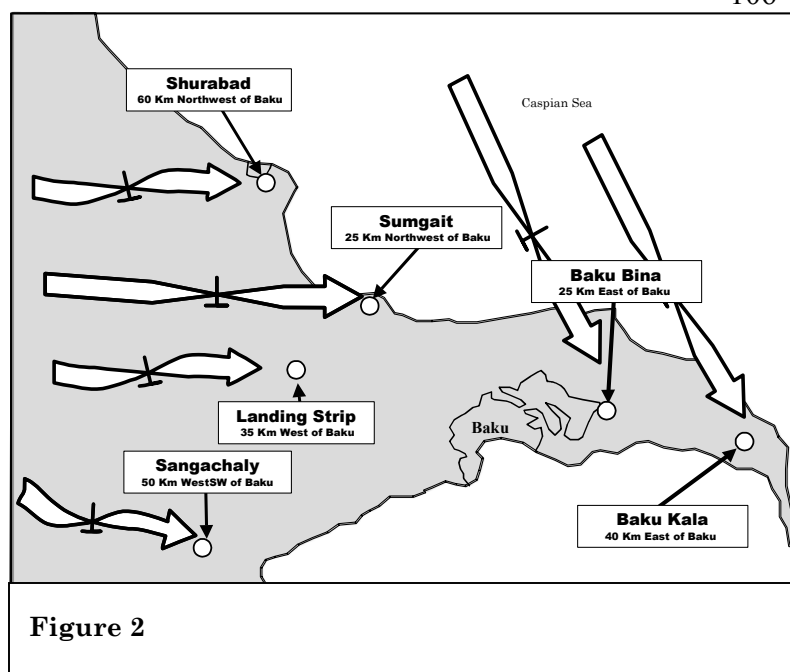
area and the status of friendly forces to create a common operational picture³ (COP) of the current situation. Additionally, input from the coalition/joint theater logistics management element (C/JTLME) on all relevant data on throughput capability to the status of C-130-capable airfields and potential re-supply drop zones in the joint operational area (JOA) was integrated with the results of intelligence collection to give commanders at each echelon an accurate assessment of the conditions in theater.

THE 1ST UA PREPARES FOR ENTRY OPERATIONS:

When the 15th Division Air Ground Task Force (AGTF) issued warning orders to alert the designated Units of Action, it also integrated each UA into the force's C4 network, ensuring the developing common operational picture was available to commanders at each echelon as they received initial

planning guidance for their mission of defeating Azeri insurgents and stabilizing the Azeri government.

The intelligence already available from national and theater assets, as well as information on friendly forces, weather, and geo-spatial products provided through the global information grid⁴ (GIG), flowed



³ COP. An identical view of an operation shared by more than one command. An operational picture is a single display of relevant information within a commander's area of interest. Separate echelons create a common operational picture

⁴ GIG. Global Information Grid (GIG) is the globally interconnected, end-to-end set of information capabilities, associated processes, and personnel for collecting, processing, storing, disseminating and managing information on demand to warfighters, policy makers, and support personnel. It includes all owned and leased communications and computing systems and services, software (including applications), data, security services, and other associated services necessary to achieve Information Superiority. It also includes National Security Systems as defined in section 5142 of the Clinger-Cohen Act of 1996. The GIG supports all Department of Defense, National Security, and related Intelligence Community missions and functions (strategic, operational, tactical and business), in war and in peace.

123 through the CICs and was pushed directly to the Unit of Action Future
124 Combat System (FCS) platforms, allowing commanders at each echelon to do
125 their planning and rehearsals on the same systems they used in daily
126 garrison training and operations. The commander of the 1st Unit of Action
127 Brigade was given a warning order to prepare to deploy and attack and
128 destroy Azeri Islamic Brotherhood (AIB) forces in Baku. With the help of
129 FCS-embedded planning and decision-making tools and the developing
130 common operational picture at the Corps level Home Station Operations
131 Center (HSOC), he began to develop his initial plan. Terrain reasoning tools
132 integrated with enemy status feeds showed him certain axes of advance
133 would be preferable to others. He settled on three particular converging axes
134 into the city.

135 The commander of the 1st UA used information from coalition/joint
136 theater logistics management element (C/JTLME) fused with intelligence
137 reporting from airborne assets and SOF teams operating in the area to select
138 six airfields in vicinity of Baku (25 to 60 km away from the city) as his
139 planned points of entry. In accordance with the commander's intent, the staff
140 planned for the simultaneous deployment of all three combined arms
141 battalions. Based on his plan for the attack on the city and the capabilities of
142 each airfield, his staff used their Future Combat System-embedded planning
143 tools to develop a scheme for tailoring the UA's forces into packages for
144 deployment into the six airfields in the objective area. UE elements, such as
145 reconnaissance and surveillance assets, were integrated into the UA's force
146 packages, insuring these critical assets were delivered to the right place to
147 support the UE commander's shaping operations and provide support to the
148 UA during the entry operation. The brigade commander knew a key part of
149 the operation would be the period of transition – that time when his own
150 assets were on the ground, but he was still heavily reliant on intelligence and
151 fire support from echelons above the UA. He and his staff planned to plug
152 into those external assets en route to the area of operations (AOR) and to
153 deploy an Early Entry Control Party (EECP) to accept Battle Command upon
154 arrival.

155 Even as the Brigade Unit of Action staff was doing its planning at
156 home station, their work was distributed across the network, allowing the
157 battalions to conduct their planning in parallel, keeping pace and refining
158 their plans as required based on the information derived from the continually
159 updated common operational picture. As their plans matured, commanders
160 identified and refined critical information requirements that focused ongoing
161 in-theater national, joint, and coalition intelligence collection activities, and
162 attacks to shape the area where the 1st UA would enter the fight.

Earlier, the President of the United States authorized the deployment of strategic Air Force assets into Turkey to establish staging bases for the deployment of U.S. forces into the Caspian region. The Army's Distribution Battalion of the Area Support Force accompanied the Air Expeditionary Force (AEF) into theater to establish visibility and throughput capability as far forward as possible. ¹

Transformation: Modularity / Tailorability

WHAT ENDURES – Battalions are the UA's principle maneuver units, capable of independent operations. They receive attachments and may themselves be attached to other units.

WHAT CHANGES – Battalions are completely capable of autonomous operations. They may operate autonomously and non-contiguously, perhaps within the depth of the enemy's defense. Modular design, in equipment and organization, allows them to receive attachments that immediately integrate into the unit's C4ISR system and networks, maximizing the effects of networked fires and other support. Units are tailored in anticipation of mission requirements and retailored as requirements change.

Transformation: Planning and control measures

WHAT ENDURES – Commanders mitigate risk through anticipating and planning for uncertainty and the friction of war. They achieve flexibility and agility by developing contingency plans allowing for rapid execution of branches and sequels to the adopted course of action. Control measures communicate their plans and provide a common frame of reference for communicating changes.

WHAT CHANGES – Enhanced situational awareness, of both friendly and enemy situations, reduces uncertainty of the present situation and allows the commander to focus planning on the action-reaction-counteraction sequence of the coming battle. Control measures will be more dynamic, disseminated via the network as they are developed and changed in the course of the battle. Awareness of the location and status of all friendly forces will reduce the need for restrictive control measures.

THE 1ST UA DEPLOYS TO CONDUCT ENTRY OPERATIONS:

Shortly afterwards, the U.S. 15th Division air ground task force (AGTF) was alerted and initiated movement from its garrison at Fort Stewart to the nearby departure airfield. While staging from its garrison, the Unit of Action staff maintained connectivity and planning coordination with the Unit of Employment info-sphere through the Home Station Operations Center (HSOC) of the 15th Division AGTF, and continued mission planning as they further refined force package options based on the commander's scheme of maneuver to attack Baku. Mission planning and rehearsal tools embedded in each vehicle and system of the Unit of Action enabled leaders at all levels to continue planning and rehearsing their missions even as they waited for their turn in the loading queue.

The UA's elements, now tailored for the fight and accompanied by the early entry UE Command Post, departed from air points of embarkation (APOEs) at Fort Stewart's Hunter Army Airfield and Savannah International Airport by strategic airlift (C-5/C-17). While aboard aircraft en route, battalion and company commanders and their staffs were able to use their en route mission planning systems (EMPRS) to gain access to the common operational picture. The commander capitalized on this situational

awareness and used his en route mission planning system to further refine his planning and conduct virtual rehearsals. Once his plan emerged, he focused sensors and other collection assets on key areas allowing him to monitor areas of critical importance (named areas of interest, NAI). Access to joint capabilities enabled his ability to prepare his battlespace even while still enroute

to the points of entry. Every commander in the UA, whether already deployed or still deploying, had access to the information being fed into the common operational picture (COP) from sensors and SOF forces operating in the objective area. This COP was based on the commander's critical information requirements (CCIR).²

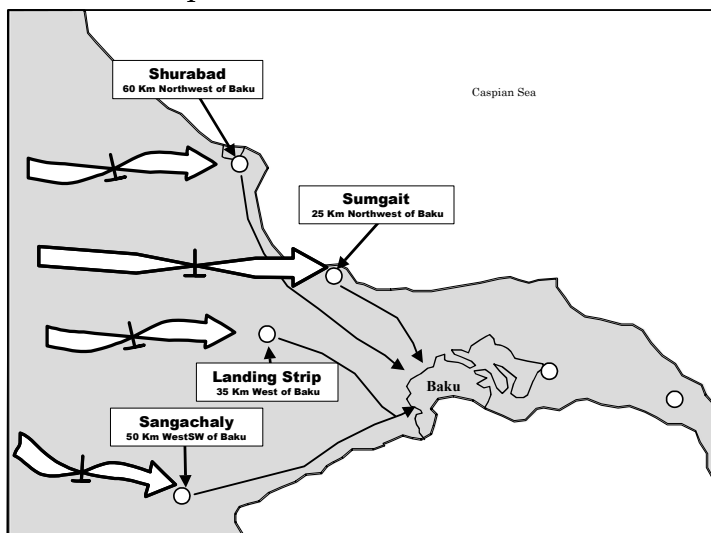


Figure 3

244 The commander of the 1st Brigade UA was traversing the Atlantic
245 Ocean in an aircraft when he was alerted that two of the six airfields he
246 planned to use were no longer viable. Examining the common operational
247 picture, he saw that Signal Intelligence (SIGINT) from Aerial Common
248 Sensor (ACS) collection had detected Azeri Islamic Brotherhood (AIB)
249 insurgent forces occupying positions overlooking the two airfields east of the
250 city. Navy and Air Force aircraft operating in the area were available to
251 engage the insurgents, however, Special Operations Forces teams indicated
252 insurgents were in positions that put the civilian population at high
253 collateral damage risk near those two points of entry.

254 Using the collaborative and integrated terrain tools, the commander
255 re-examined his plan and the staff examined options for changing it. Before
256 the Unit of Action arrived in Turkey, they had outlined a new ground tactical
257 plan that used Army aviation to move one battalion into Baku, and had
258 nearly completed adapting the airflow and deployment plan required to
259 support it. Since the new plan required Army aviation lift assets for an air
260 assault, the staff coordinated with Unit of Employment staff to make these
261 assets available as well as their necessary support elements, such as forward
262 area refueling facilities – all while still airborne over the Atlantic Ocean.
263 This updated plan was immediately transmitted throughout the UA, and
264 each commander and leader digitally acknowledged receipt of the change and
265 made the necessary internal adjustments.

266 The first C5 and C17 aircraft landed at air bases in Turkey on D+2,
267 delivering UA elements in force packages for trans-loading to C-130s.
268 Support elements deployed to support the Unit of Action were included in the
269 force packages, allowing them to be delivered to positions where they could
270 provide sustainment for newly planned aviation operations in the objective
271 area. They also developed the support structure that enabled operations to
272 extend beyond the UA's ability to support itself over 72-hours of high-
273 intensity combat.

274 As Unit of Action elements trans-loaded into C-130s for the intra-
275 theater move into the objective area, the UA extended its info sphere⁵ to
276 support force protection operations in Turkey as well as entry operations into
277 Azerbaijan, using the C4 network and planning tools.

278 Meanwhile, the Unit of Employment (UE) commander used joint and
279 coalition assets to isolate the area of operations and conduct shaping
280 operations in preparation for the 1st Brigade UA's entry into four airfields

⁵ Infoshere. The layered, integrated network of information and communications capabilities required to support effective tactical operations within the UE and UA.

selected as their tactical points of entry (shaping effort⁶). Shaping operations focused on the points of entry previously selected for use, but planned alternate points of entry were monitored so they would be available on demand, assuring operational flexibility and surprise. To assure operational mobility, the UE commander initially focused this shaping effort on those threats capable of interdicting his chosen routes and locating and destroying threats to air deployment into the airfields. Using space-and airborne reconnaissance assets in conjunction with Special Operations Forces teams near each airfield that could emplace intelligent Integrated Mine Systems⁷ (IMS), the shaping force was ready to attack any immediate threat. With those conditions satisfied, the commander shifted the emphasis of his shaping operations towards the objective area and disseminated his plans and intent for the shaping operations to the UA and its subordinate units. The UA Commander's shaping criteria, those conditions that were to be met before committing the combined arms battalions to the attack, included:

- UA elements (including TUAV/SUAV elements) set in surveillance positions over key named areas of interest (NAI) in the objective area;
- Identification and isolation of the Icheri Sheher Brigade;
- Isolation of key routes and locations in Baku;
- Identification and destruction of enemy command and control nodes of the Icheri Sheher Brigade;
- Identification and destruction of enemy fire support systems;
- Identification and destruction of all SA-18's and similar man-portable ADA systems that could interdict Army aviation landing at LZs in Baku.

Transformation: Responsiveness

WHAT ENDURES – Army forces provide the nation and its leaders with responsive, full spectrum options for the employment of military force.

⁶ Shaping operations at any echelon create and preserve conditions for the success of the decisive operation. FM 3.0 14 JUN 2001

⁷ Suite of sensors to be employed to enhance early entry force lethality and survivability, perform defensive, security, flank protection, and other combat missions. A system or system of systems of various munitions, sensors, and communication devices that can implement obstacle intent or attack tactics autonomously, initiate combat reports, and respond to remote commands.

WHAT CHANGES – The Unit of Action’s inherent deployability and modular design enable strategic and operational responsiveness.

Transformation: Situational awareness

WHAT ENDURES – Commanders consider all aspects of the situation while planning, preparing for, and conducting their operations. They and their staffs communicate their plans and intent across the force to synchronize operations. Staffs track the progress of the battle to ensure commanders have the information required to make effective decisions.

WHAT CHANGES – Enhanced systems and networks ensure that all elements of the force are working from the same common operational picture. Information on the status of friendly forces and the environment is continually merged with ISR input and reporting and distributed across the force, even as units are deploying. Distributed, real-time awareness (via the COP) enables parallel planning, distributed decision making (in accordance with commander’s guidance and intent), and effective battle command.

Transformation: Agility

WHAT ENDURES – Commanders and their staffs adapt their plans to changing situations, ensuring they maintain the initiative and impose their will on the enemy.

WHAT CHANGES – Enhanced situational awareness and embedded tools that support networked, collaborative planning provide the commander the ability to see first, act first and finish decisively, even in the face of changing conditions. The UA’s modular design allows rapid force re-tailoring, giving the commander flexibility. Enhanced C4 networks and collaborative planning tools enable effective battle command on the move, maximizing UA’s inherent agility.

THE 1ST UA CONDUCTS ARRIVAL OPERATIONS AS PART OF ENTRY

UA reconnaissance elements were the first to arrive at each airfield. They quickly deployed into pre-planned observation positions that gave complete sensor over-watch of named areas of interest (NAI) on the approaches to the airfield, bringing the first of the organic sensors into the objective area. These sensors, consisting of ground sensors and unmanned aerial vehicles, established an improved degree of resolution to the common

operational picture (COP) of all forces operating in the area as the information they collected was fused into the COP through an advanced C4ISR system. It was not a "perfect" intelligence picture; nonetheless, the synchronized network of organic and links to external sensors gave the UA commander reasonable certainty about the environment where he would be operating.

Special Operations Forces in the area quickly established on-the-ground links with the reconnaissance elements, fusing their collective Intelligence, Surveillance, and Reconnaissance (ISR) capabilities to which the UA had been connected via the UE. Like the Special Operations Forces teams, the reconnaissance elements integrated themselves into the network of joint fires and effects, relying on Navy and Air Force aircraft operating in the area and Integrated Mine Systems for target engagement until the arrival of self-deploying Army aviation assets and the non-line-of-sight (NLOS) radar and effects systems of the UA. As these units arrived, they were integrated into both the developing ISR and fires and effects networks, through the UA brigade.

The Unit of Action's deployment plan used two tactical points of entry to deliver the 2nd Battalion. By splitting the battalion across two airfields, the UA commander reduced the battalion's closure time from 36 to 18 hours. As platoons closed at each airfield, they moved immediately to occupy positions that isolated the airfield, reinforcing the initial entry reconnaissance and sapper teams while protecting the point of entry from ground attack. When the companies closed at each airfield, the platoons left their positions to move out on separate axes to occupy positions that isolated Baku and brought the UA's sensors into range of their objectives in Baku.

Comanche Aviation assets had self deployed into the area of operations and were conducting reconnaissance, close support, and command and control missions as the "quarterback element" in support of the Unit of Action's shaping operations using both manned and unmanned teams. RAH-66 Comanches from the UA's Aviation element destroyed enemy artillery and armored vehicles according to the attack guidance matrix. Additionally, sensors in the Comanches continued to feed detailed information on enemy forces into the COP.

While the Tactical Unmanned Aerial Vehicles (TUAV) conducted launch and recovery operations from their location at the tactical point of entry, integration of ISR assets continued through reports from echelons above the UA with those organic to the UA. The increasingly sophisticated network, reinforced by the UA's organic sensors now gave commanders at all echelons, from battalion to United States European Command (USEUCOM),

392 a much greater resolution in the common operational picture. Integration
393 into the network and supporting info sphere ensured all elements of the Air
394 Ground Task Force (AGTF) were incorporated into and shared the same
395 common operational picture (COP) as the other units in the force.^{3 4 5}

396 Reconnaissance continued of named areas of interest (NAIs) to locate
397 suspected elements of the Icheri Sheher Brigade. Reconnaissance elements
398 of the combined arms battalion maneuvered scouts and sensors to conduct
399 reconnaissance and surveillance of additional named areas of interest (NAIs)
400 around Baku. With sensor assets providing target acquisition, networked
401 fires were employed to isolate the UA area of operations and kill enemy
402 artillery and air defense assets. TUAVs loitering over the outskirts of the
403 city acquired armored personnel carriers (APC) and mortars, and provided
404 immediate sensor to shooter links for the Non Line of Sight (NLOS) battalion
405 and NLOS mortar sections within the combined arms battalions. Intelligent
406 Integrated Mine Systems, seismically and acoustically verified enemy
407 armored personnel carriers then destroyed them with linked wide area
408 munitions. To minimize collateral damage within the city, the UA
409 commander directed his fires elements to place loitering and precision attack
410 munitions (LAMs/PAMs) to destroy the armored personnel carriers and
411 mortar systems.⁶

412 Unit of Action Tactical Unmanned Aerial Vehicles (TUAV), employing
413 Signal Intelligence (SIGINT) collection and emitter mapping capability,
414 acquired an enemy command post and associated mortar position inside the
415 Inner City. A small UAV was dynamically re-tasked⁸ to the reported location
416 and identified the targets. Network Fires received the target acquisition data
417 from the UAV and selected available NLOS systems to engage the targets
418 within minutes, in accordance with the commander's attack guidance matrix.
419 The UAV remained on station to assess results of the engagement (battle
420 damage assessment - (BDA)).

421 As combined arms battalions moved from their tactical points of entry,
422 they deployed on separate, dispersed axes. The Comanches provided
423 reconnaissance support out front, looking for any enemy forces which could
424 threaten the UA Battalions as they moved toward Baku.

⁸ I.E. assigned a new mission while in flight.

425 The reconnaissance company of the 2nd Combined Arms (CA) battalion
426 located several obstacles, minefields, crater charges, abatis and a bridge,
427 along the battalion's direction of attack. With the new obstacles now visible,
428 terrain-reasoning tools automatically recalculated alternate routes. The 1st
429 Platoon Leader launched
430 his Organic Air Vehicle
431 (OAV) from the back of
432 his command and control
433 vehicle to get a better
434 look at a bridge crossing
435 just ahead. Concern for
436 the security of the
437 crossing stemmed from
438 movement indicated by
439 sensors in the area. The
440 OAV quietly lifted off and
441 followed the programmed
442 route to a vantage point
443 providing reconnaissance
444 and surveillance of the bridge. Moving to a position of advantage on his
445 platforms, the platoon leader then dismounted a squad of infantry to secure
446 the bridge. They moved by covered routes, infiltrating under the watchful
447 eye of LOS/BLOS gun crews and sensors. Some 1500 meters down the road
448 and ahead of the platoon, the OAV slowly hovered toward the bridge. The
449 OAV's sensors detected dismounted personnel in the wood line over-watching
450 the bridge and transmitted their image back to the platoon leader's display.
451 Quickly, NLOS assets fired into the wood line to protect the the bridge
452 seizure. Once at the secured bridge site, the platoon leader directed fires and
453 the next infantry squad moved across and assaulted into the woodline, killing
454 the enemy squad as fires continued to suppress and obscure them.



455 During the fight, the support battalion's elements intensively tracked
456 consumption across classes of supply through the common operational picture
457 (COP) and worked with the theater support command (TSC) and national
458 providers to throughput mission-configured loads down to unit level with
459 minimal requirement for handling at tactical points of entry. These
460 configured loads of fuel and ammunition were capable of either ground or
461 aerial delivery, with minimal readjustment, as indicated by the UA
462 commander. Operating from their positions near the tactical point of entry at
463 Sumgait, they moved ammunition and other supplies to where they were
464 needed to sustain the momentum of the attack.

465 Having covered the 25-60km distances in a matter of two hours from
466 the point of entry to areas in vicinity of Baku, the UA had a series of small,
467 localized fights, such as described above, to destroy pockets of enemy
468 resistance along the dispersed routes. Commanders were able to prepare,
469 deploy, arrive, and employ forces without loss of momentum because they
470 consistently attained and maintained "the quality of firsts."

471
472 **Transformation: Vertical integration**

473
474 WHAT ENDURES – During entry operations, the UA is part of an integrated
475 team, heavily reliant on the contributions of UE, Army, Joint, and
476 interagency assets for situational awareness during the entry / transition into
477 theater.

478
479 WHAT CHANGES – As the UA's ISR assets are brought to bear and feed
480 their own collected data and intelligence into the COP, the UA is less reliant
481 on echelons above UA for its situational awareness and, via enhanced C4
482 networks, improves the granularity of their COP, feeding it from the bottom
483 up to all echelons of the force.

484
485 **Transformation: Horizontal integration**

486
487 WHAT ENDURES – Combat units maintain awareness of the units on their
488 flanks and establish coordination and liaison links as required. Adjacent
489 units deconflict their operations while insuring they are mutually supporting.
490 Conventional units operating with or in the vicinity of special operations
491 forces establish coordination links to prevent fratricide and enhance mutual
492 operations.

493
494 WHAT CHANGES – While on the move (deploy – employ), units maintain
495 situational awareness of the activities of all forces in their area via the
496 common operational picture. Reporting from special operations forces will be
497 one of the inputs to the COP, enhancing the situational awareness of
498 conventional forces operating in their vicinity. Liaison will be virtual,
499 accomplished via the C4 network.

500
501
502 **Transformation: Combined arms and air-ground teaming**

504 WHAT ENDURES – Combined arms organizations and warfare maximize
505 the unique capabilities of each system and present the enemy with tactical
506 dilemmas.

507
508 WHAT CHANGES –Battalion-level organizations are inherently combined-
509 arms. The presence of both unmanned aerial vehicles and armed helicopters
510 as organic elements of the brigade-level UA add the synergistic effects of air-
511 ground teaming to the UA's capabilities.

512
513 Through this first vignette the following tactical concepts were
514 illustrated, and will be further explored in additional vignettes within this
515 annex.

516
517 Upper Tier (Brigade and Battalion)

- 518 • Synchronize ISR, Fires, Maneuver and Logistics
- 519 • Develop the Situation
- 520 • Employ Forces to Positions of Advantage
- 521 • Combined Arms
- 522 • Battle Command on the Move
- 523 • Operational Maneuver Over Strategic Distances
- 524 • Transition

525 Lower Tier (Company and Below)

- 526 • Tactical Assault
- 527 • Fire and Maneuver at Tactical Stand-off
- 528 • Fire Control and Distribution

529 From the tactical concepts developed in the entry operations vignette,
530 the following requirement are derived for these capabilities:

- 531 • Lethality
 - 532 ○ Accurate fires on demand
 - 533 ○ Sensor-to-shooter links
 - 534 ○ Improved precision munitions
 - 535 ○ Area suppression and obscuration
- 536 • Mobility

- 537 ○ Decisive maneuver, horizontal and vertical, day and
- 538 night, in all terrain and weather
- 539 ○ Superior tactical maneuverability in all terrain
- 540 • Training
- 541 ○ Virtual
- 542 ○ Individual, collective, and leader

543

544 These required capabilities, when examined in the framework of other
545 vignettes and studies, lead to our tactical concepts for fighting in the unit of
546 action. These tactical concepts are addressed in detail in Chapter 4.

547

1.2 COMBINED ARMS OPERATIONS FOR URBAN WARFARE TO SECURE PORTION OF MAJOR URBAN AREA

Urban Operations (UO) are operations planned and conducted in an area of operations (AO) that includes one or more urban areas. An urban area consists of a topographical complex where man-made construction or high population density is the dominant feature. Typical characteristics include changing conditions, small-unit battles, communication challenges, non-combatants, limited mounted maneuver space, three-dimensional terrain and a need to isolate critical points.

Given the prevalence of large cities throughout the world, units of action will be required to conduct urban operations as part of a unit of employment in support of a joint task force. Figures 5 and 6 depict the operational framework for a unit of action attack in a major urban area:

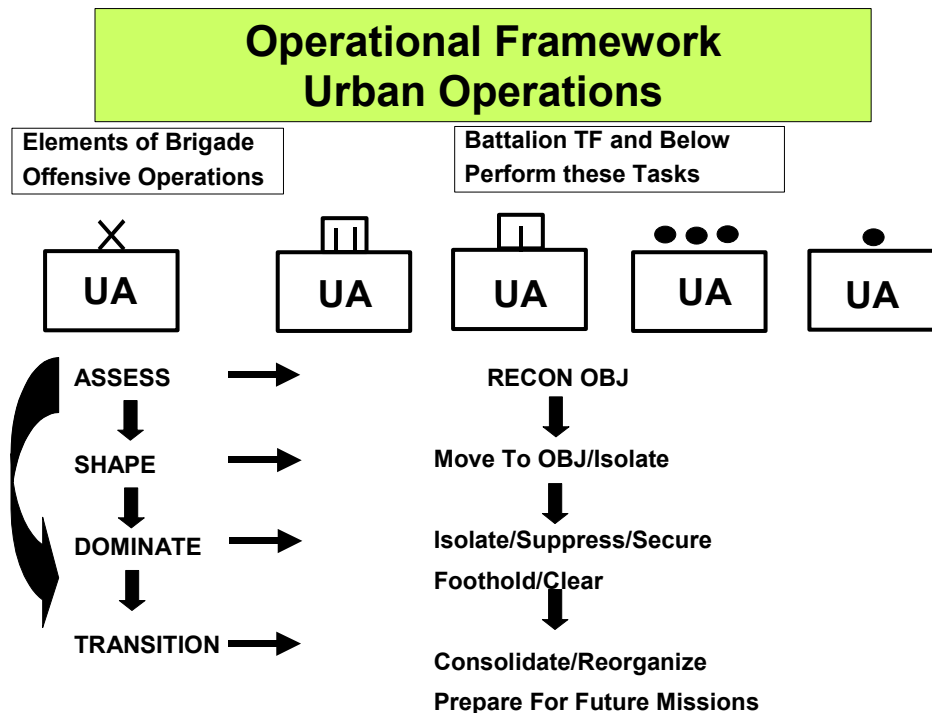
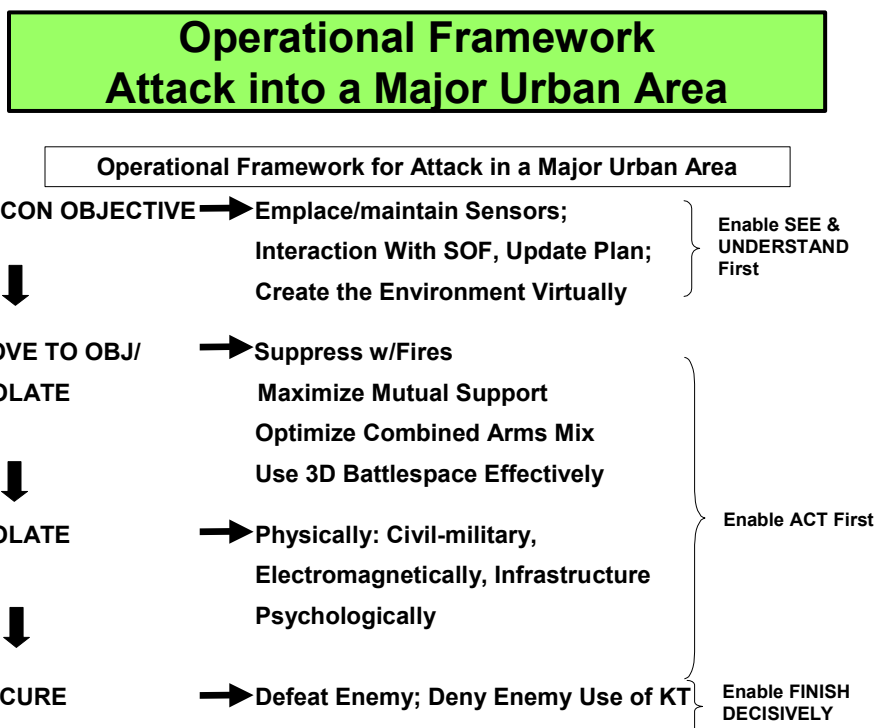


Figure 5

567



568

Figure 6

571

572

573 1.2.1.1 1ST BRIGADE MISSION:

574 The brigade's mission is to attack to seize Baku city center in order to
575 facilitate its return to host nation control.

576 Baku is a 3rd world city of two million that is composed of massed and
577 heavy-clad framed buildings, which are dispersed in circular street patterns.

578 Currently, threat forces are occupying company strong point defenses
579 within the city in order to control critical areas and force US forces into a
580 battle of attrition in order to challenge US resolve. Threat forces consist of
581 the Icheri Sheher Brigade (I-S BDE). The I-S BDE is a well-organized and
582 trained BTR-equipped motorized infantry unit with armor support (T-72),
583 and integrated air defenses and artillery units. Additionally, the Aziz clan,
584 the predominant para-military group within Baku, augments them.

585

586 1.2.1.2 CONCEPT OF THE OPERATION:

587 The brigade conducts a ground attack and air assault of the Baku city
588 center. One battalion (supporting effort) moves by ground supported by UE
589 and joint ISR and fires in order to isolate selected routes and objectives.
590 Additionally, the battalion seizes Objective Blue in order to protect 3rd
591 Battalion's (main effort) western flank. Simultaneously, another battalion
592 (secondary effort 2) employs joint ISR and fires to isolate the selected routes
593 and objectives. Further, it moves by ground through Aziz clan territory to
594 secure Objective Gold in order to protect 3rd Battalion's southern flank. On
595 order, 3rd Battalion (main effort) conducts an air assault in order to seize the
596 city center and allow the host nation government to regain political control.

597 1.2.1.3 BRIGADE SCHEME OF MANEUVER:

598 1.2.1.3.1 ASSESS:

599 As shown in Figure 5, the brigade will **assess** in the first phase of the
600 operation in
601 order to better
602 enable the
603 brigade to
604 understand the
605 terrain and
606 enemy in the
607 area of operation.
608 Prior to and
609 during mission
610 execution,
611 collaborative
612 planning with
613 division and joint
614 assets ensures
615 the brigade
616 understands the
617 terrain and the
618 enemy. During
619 mission
620 execution,
621 division and joint assets focus on leveraging information for the brigade

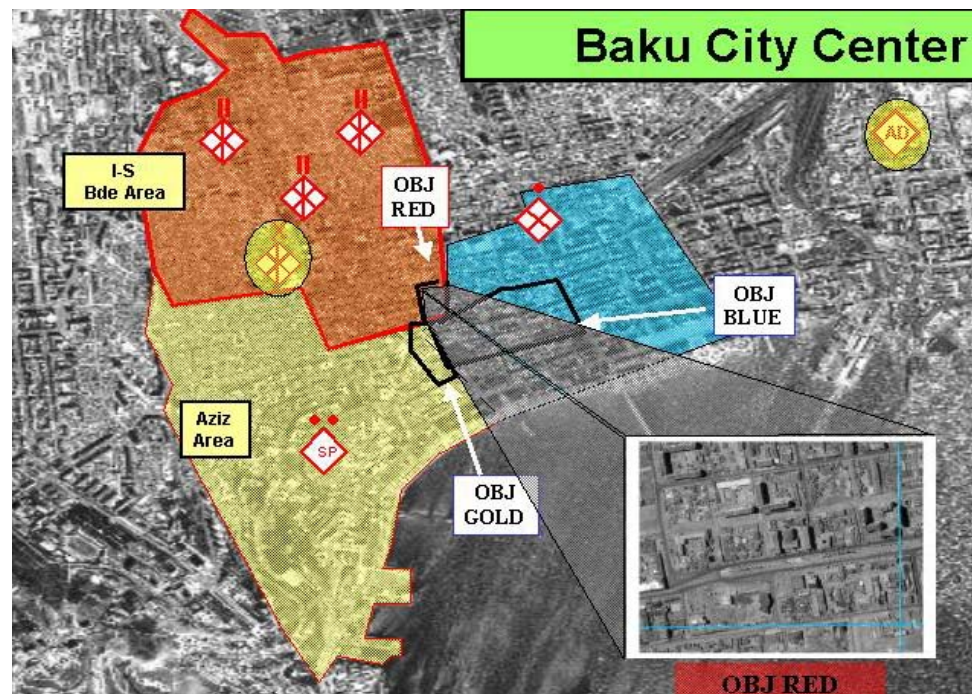


Figure 7

throughout its
battle space
through
tailored sensor
packages. This
process is
critical in
enhancing the
brigade's
understanding
of the
commander's
critical
information
requirements
(CCIR – e.g.
terrain, enemy,
and landing
zones) prior to
mission
execution.

Additionally, it will provide the brigade with the necessary flexibility in the areas of C2, the electromagnetic spectrum and A2C2 which will facilitate the commander's ability to pick the time and place of decisive combat.

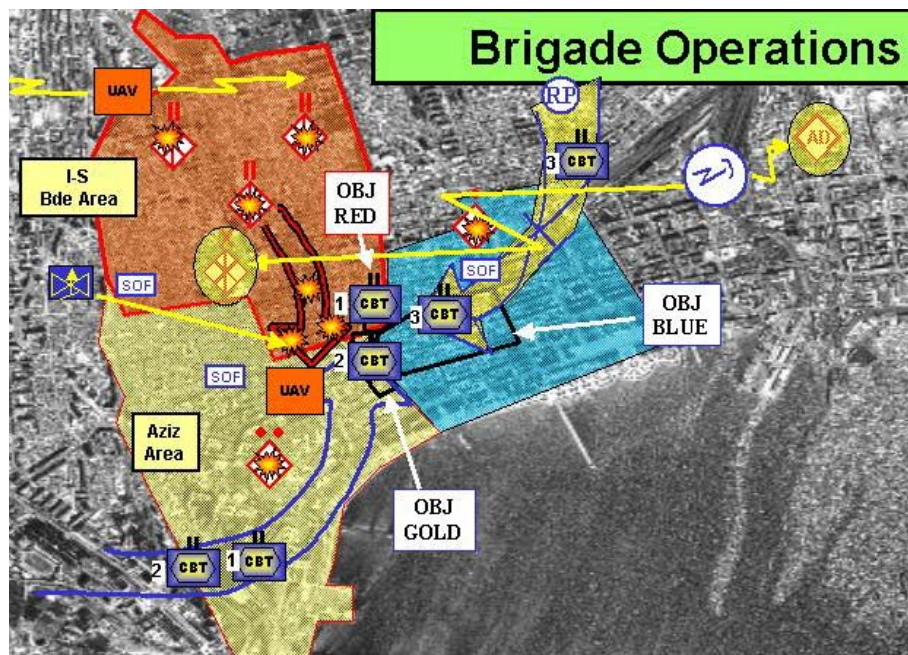


Figure 8

1.2.1.3.2 SHAPE

Just prior to and during movement to and isolation of the objectives, the battalion commanders review analysis from all assets and issue orders to begin infiltration along selected routes to the objectives. Further, commanders at all levels make any necessary changes to the existing plan based on real time updates, e.g. need for bypassing pockets of resistance prior to the objectives and re-directing assets to engage new targets. In support of attacking battalions, the brigade employs joint and UE fires on ground and air routes and onto the objective area in order to defeat enemy forces. This includes electronic attack on enemy C2, air defense, and reconnaissance assets. The brigade continuously verifies that ground and air routes are clear and provides situational obstacles in order to facilitate unit movements.

1.2.1.3.3 DOMINATE

As the brigade shapes the battlespace, the two supporting battalions attack to seize Objectives Red and Gold to secure a foothold in the city. At that time, the brigade commander commits the air assault battalion to seize Objective Blue.

1.2.1.4 BATTALION SCHEME OF MANEUVER: GROUND ATTACK

1.2.1.4.1 ASSESS – RECON OBJECTIVE

In order to support the battalion reconnaissance plan the division and brigade insert sensors north of phase line Patton to allow the battalion to focus its sensors south of phase line Patton.

1.2.1.4.2 SHAPE – ISOLATE OBJECTIVE

To isolate the objective, the brigade coordinates employment of division and joint assets to neutralize enemy forces and sensors followed by the brigade and division NLOS assets, who deliver scatterable mines in order to fix enemy reserves. Battalion NLOS fires engage enemy on the objective and along the route with precision lethal and non-lethal fires. The battalion makes unexpected contact en route to the objective, and the platoon in contact returns fire, simultaneously taking available covered positions. BLOS fires from adjacent platoons and the adjacent company destroy enemy platforms, while precision fires from the battalion NLOS company destroy enemy troops in buildings.

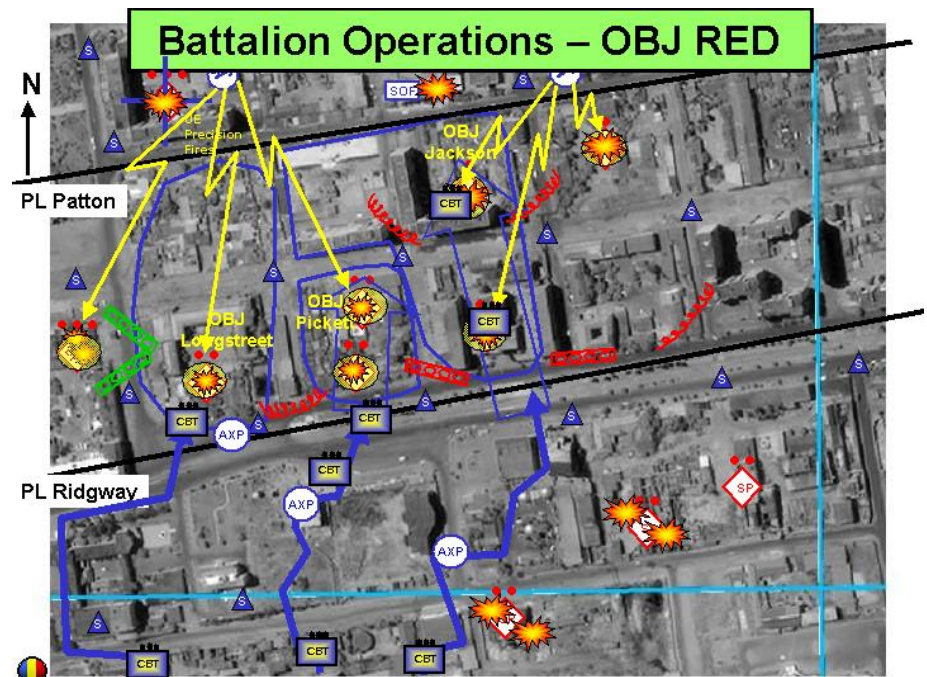


Figure 9

1.2.1.4.3 DOMINATE – SECURE OBJECTIVE

Simultaneously, the brigade and division execute precision fires to support the battalion's three companies seizing objectives Jackson, Pickett, and Longstreet, which constitute objective Red. Unmanned sensors maintain surveillance on routes while units continue to move toward their objectives.

1.2.1.5 COMPANY SCHEME OF MANEUVER:

1.2.1.5.1 ASSESS – EMLACE/MAINTAIN SENSORS

The company deploys ground sensors and UAVs to develop a higher fidelity enemy situation and facilitate collaborative planning between the company and the platoons. Special attention is paid to use of through-wall sensors in order to confirm enemy dispositions in critical buildings. This allows selective clearing versus systematic clearing operations. Ground and aerial sensors help the company commander pinpoint objective entry points while enroute to the assault position. These actions increase the tempo of operations and allow a higher probability of the unit securing a foothold onto the objective.

1.2.1.5.2 ISOLATE – SUPPRESS WITH FIRES, PHYSICALLY ISOLATE, ELECTROMAGNETICALLY ISOLATE

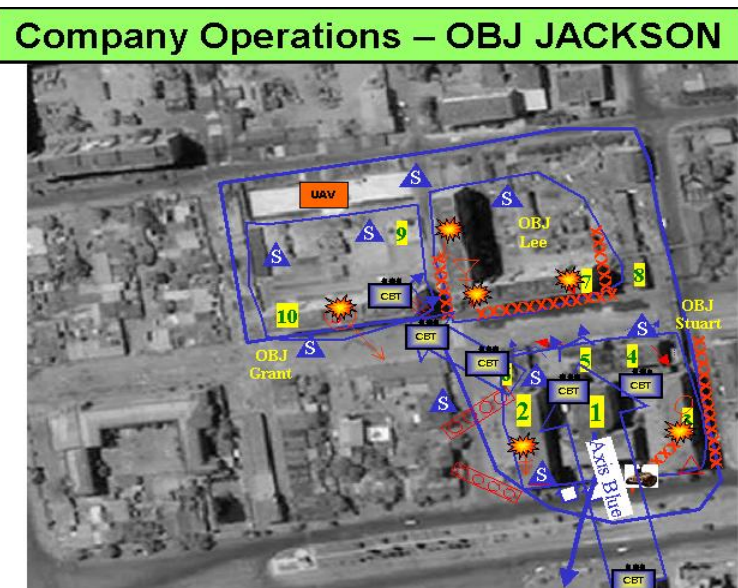


Figure 10

During the isolation phase, battalion NLOS fires eliminate targets in designated buildings based on real time information provided by scouts and unmanned systems. Ground and aerial sensors allow infantry squads to dismount in the best available covered and concealed locations then continue the attack dismounted supported by LOS and BLOS fires

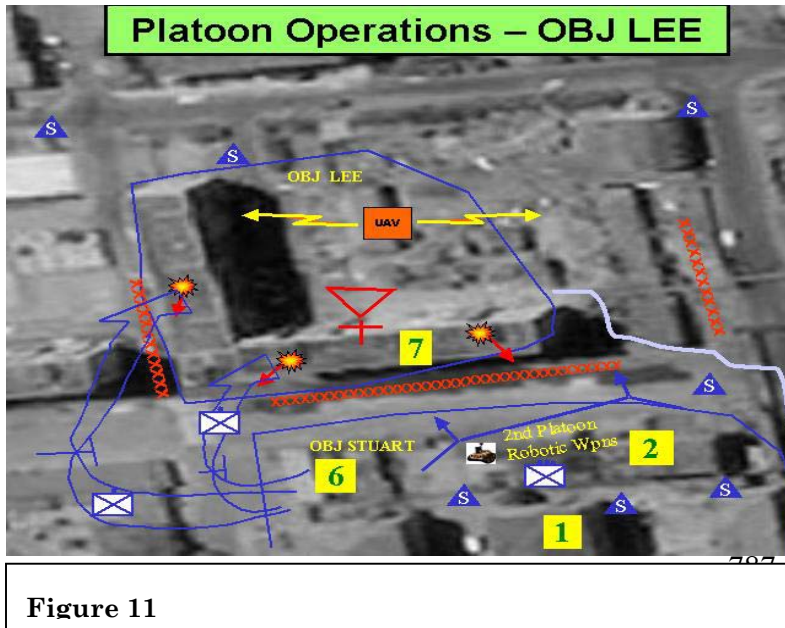


Figure 11

from the platforms.

As the dismounted element assaults, the FCS platforms provide overwatch outside the buildings to prevent enemy reinforcement from outside the objective area.

1.2.1.5.3 DOMINATE – DEFEAT ENEMY

To seize Objective Jackson, the company objective, a

platoon will seize Objective Stuart (augmented with unmanned systems) while another platoon passes and seizes Objective Grant. This allows the main effort platoon to seize Objective Lee. Simultaneously, unmanned systems maintain surveillance in order to facilitate transition to follow on operations.

1.2.1.6 PLATOON SCHEME OF MANEUVER:

1.2.1.6.1 ASSESS – EMLACE/MAINTAIN SENSORS

The platoon establishes a support by fire position with its weapons squad augmented by robotics once Objective Grant is cleared. Simultaneously, support elements clear subsurface areas then emplace unmanned systems to secure Objective Stuart and monitor critical avenues of approach.

1.2.1.6.2 SHAPE – PHYSICALLY ISOLATE

During the movement and isolation phase, platoons access company UAVs to determine entry points into key buildings. UAVs laser designate entry locations on building rooftops, which allows platoon leaders to direct PGMM fires. Additionally, the platoons use deception breaches to confuse the enemy, causing him to reposition away from the actual breach locations.

1.2.1.6.3 DOMINATE – DEFEAT ENEMY

ANNEX F UA O&O VIGNETTES

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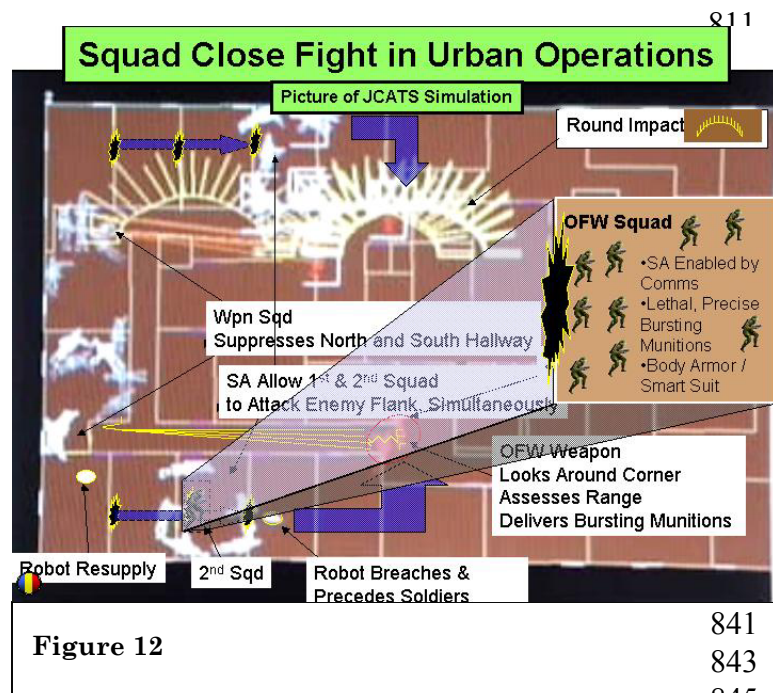


Figure 12

The assault element executes a vertical envelopment and begins top-down assault of the building. The platoons continue to employ see-through wall sensors (organic and higher) to avoid systematic clearing of unoccupied floors. Squads conduct multiple top-down breaches and systematically clear necessary floors and rooms. Manned and unmanned

platforms maintain security on the exterior of the building and destroy

any enemy forces attempting to reinforce the objective.

1.2.1.7 SQUAD SCHEME OF MANEUVER:

1.2.1.7.1 ASSESS – UPDATE PLAN

The assault squads use Land Warrior “see around the corner technology”, through-wall sensors, and robots to pinpoint two enemy locations. They pass these locations to the rest of the platoon.

1.2.1.7.2 ISOLATE – SUPPRESS WITH FIRES

On the first engagement, one squad suppresses enemy located down the hallway and engage them with lethal bursting munitions. Simultaneously, the second squad verifies the second threat location and checks for booby traps with robotics.

1.2.1.7.3 DOMINATE – DEFEAT ENEMY

Three dimensional position locations, plus advanced communications systems between squads and with the platoon, enable the platoon leader to maintain situational understanding. He can thus control two squads clearing

simultaneously. Robotic breaches allow the squads to move through walls, not doors, reducing exposure to enemy direct fires. Precision engagements with Land Warrior's bursting munitions complete the destruction of enemy forces. Robotics resupply the force with critical ammunition and demolitions.

1.2.1.8 BATTALION SCHEME OF MANEUVER: AIR ASSAULT

1.2.1.8.1 ASSESS – RECON OBJECTIVE

Upon mission receipt, the brigade and battalion begin to build an understanding of the objective area with organic and external sensors, including unmanned sensors, the brigade's organic RAH-66 detachment, and the battalion's reconnaissance company. These assets concentrate on identification of suitable helicopter landing zones and surveillance of known and suspected enemy locations that can influence the landing zones. The brigade commander, serving as the Air Assault Task Force Commander (AATF CDR), refines and coordinates the suppression of enemy air defenses with the division's NLOS fires units. The AATF CDR approves the primary and five alternate landing zones, each capable of landing one infantry platoon.

1.2.1.8.2 SHAPE – ISOLATE OBJECTIVE

During movement, the brigade commander executes the plan to suppress enemy air defenses to support 3rd Battalion's air assault. Division and brigade execute lethal fires on targets outside the city and division delivers non-lethal electronic fires on air defense and targets within the city in order to minimize collateral damage. Simultaneously, aircraft lift from distributed pickup zones and travel along designated air corridors. While enroute, commanders maintain situational awareness through the COP provided by brigade.

1.2.1.8.3 DOMINATE – SECURE OBJECTIVE

Enroute, if sensors on the planned landing zones detect enemy presence, commanders issue instructions for use of alternate landing zones. Aircraft terminal guidance online and route adjustment is completed by C2 aircraft and then given to lift serials that must land on alternate landing zones due to enemy dispositions. Platoons land on separate landing zones and achieve mutual support by links to NLOS fires, 3D position location, and accurate urban mapping. Overall, the enhanced situational awareness allows all companies to move dispersed and bypass enemy forces. Division,

brigade, and battalion sensors work collaboratively to continuously update unit COPs to allow all commanders to adjust plans and routes as needed.

1.2.1.9 CONCLUSIONS

Urban operations in the foreseeable future will remain manpower intensive, combined arms, and joint. Objective Force brigades will still have to close with and destroy the enemy inside buildings, in streets, and underground. The multi-dimensional nature of the urban battlespace (surface, subsurface, supersurface, intrasurface, and airspace) will not change. As a result, the enemy is and will remain harder to detect and isolate than in many other environments.

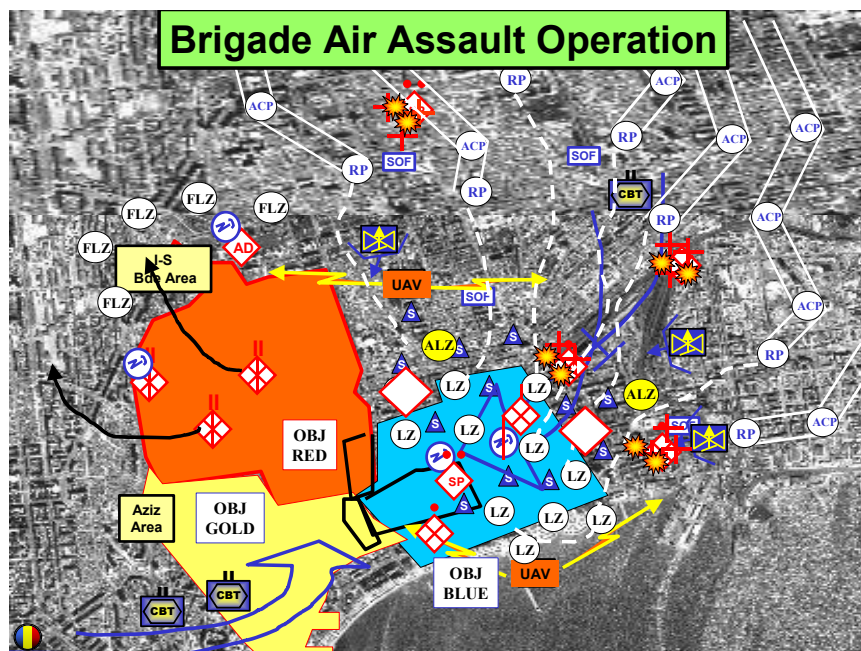


Figure 13

Several aspects of urban combat, however, will change as Objective Force brigades, enabled with improved doctrine, training, leader development, organizations, and materiel, conduct operations. Enhanced situational understanding will enable us to avoid systematically clearing unoccupied sections of urban areas, and thus focus available combat power on key terrain. Three dimensional terrain representations will allow leaders to

921 react to changes in the enemy situation, adjust plans on the move, and
922 control dispersed forces to a far greater degree than is possible today.
923 Objective brigades will be able to isolate objectives with electronic and non-
924 lethal effects in addition to fires and forces. Finally, robotics will assume
925 many manpower intensive and dangerous tasks, such as surveillance of
926 cleared areas and breaching.

927 To execute urban operations as depicted in this vignette, the following
928 capabilities are required:

- 929 • Agility and Versatility
 - 930 ○ Battle Command on the Move
 - 931 ○ Enhanced SA
 - 932 ○ C4ISR Upgrades – Dismounted Soldier Comms
- 933 • Sustainability
 - 934 ○ Enable Continuous Operations
 - 935 ○ Load Optimization
 - 936 ○ Prognostics and Diagnostics on Soldiers and Platforms
- 937 • Survivability
 - 938 ○ Enhanced Ballistic Protection
 - 939 ○ Robotics for Manpower-intensive or Dangerous Tasks
- 940 • Lethality
 - 941 ○ Accurate Fires on Demand
 - 942 ○ Sensor-to-shooter Links
 - 943 ○ Improved Precision Munitions
 - 944 ○ Area Suppression and Obscuration
- 945 • Mobility
 - 946 ○ Decisive Maneuver, Horizontal and Vertical, Day and Night, in All
 - 947 Terrain and Weather
 - 948 ○ Superior Tactical Maneuverability in All Terrain
- 949 • Training
 - 950 ○ Virtual
 - 951 ○ Individual, Collective, and Leader

952
953 ■ In addition to the above capabilities, the brigade needs the following manned and
954 unmanned systems:

- 955 ■ Manned
 - 956 ○ Tactical Transport – Battlefield Mobility
 - 957 ○ FCS Mobile Gun System – LOS/BLOS Fire Support
 - 958 ○ NLOS Mortar – Indirect Fire Support
 - 959 ○ Missiles-in-a-Box – Precision Fire Support
 - 960 ○ C2 Vehicle – Enable Battle Command on the Move
 - 961 ○ R&S Vehicle – Perform ReconnaissanceUnmanned

- 962 ○ Armed Recon/Assault Vehicle – Close Fire Support for
- 963 Assaulting Infantry
- 964 ○ Unattended Ground Sensors – Surveillance and Early Warning
- 965 ○ MULE – Transport Soldier Equipment
- 966 ○ Soldier Robot – Man-portable Sensor Package
- 967 ○ Small Unmanned Aerial Vehicle (SUAV) - Platform-mounted,
- 968 Battalion
- 969 ○ Organic Aerial Vehicle (Medium) – Platform-mounted, Company
- 970 ○ Organic Aerial Vehicle (Light) – Man-portable, Platoon/Squad

1.3 MOUNTED FORMATION CONDUCTS PURSUIT AND EXPLOITATION

This vignette is a notional Unit of Action (UA) engagement supporting concept development. The UA is attacking an enemy in open rolling terrain with some variance of complexity, such as defiles and small villages. Explicitly, the discussion show-cases the UA's tactical agility to exploit offensive success and pursue a fleeing enemy. The UA is operating under the objective force unit of employment and a Joint Task Force. The enemy is a combination of conventional forces, paramilitary, and special police challenging the UA forces with both direct military combat engagements and asymmetric means.

In this vignette the UA must develop the situation out of contact employing reconnaissance, integrate ISR from UE and Joint assets, target the most dangerous enemy systems, and engage those systems with accurate, assured lethality from both internal and external assets. This requires robust ISR, speed, and a very flexible adaptable non line of sight (NLOS) fires. Additionally, the reconnaissance effort must accomplish two critical tasks. First deny the enemy the ability to conduct reconnaissance. The UA does this via reconnaissance and surveillance identifying key enemy collection systems, targeting these systems, linking organic sensors to internal or external NLOS fires, and reporting BDA. Secondly the UA must detect obstacles (natural and manmade) and determine bypasses or employ sapper operations (directly or employing BLOS/NLOS fires) to facilitate the speed and operational tempo necessary for the force to conduct simultaneous attacks against a dispersed and fleeing enemy.

The air ground teaming of both manned and unmanned reconnaissance provides the necessary means to vector and focus reconnaissance to achieve accurate targeting and identify mobility corridors. The mobility corridors enhance survivability of the UA presenting high-speed approaches combined with terrain masking and opportunities to move dispersed. The combination of air ground maneuver capabilities inside the UA facilitates the unit's movement in the zone of action by increasing opportunities for simultaneous execution of tactical concepts on multiple axes, and accelerates the initiation of tactical stand off and close assault.

Developing the situation is continuous throughout the tactical operation and is not sequential in the unit of action's conduct of combat operations. The unit of action cannot see first or understand first without developing the situation for the tactical engagement. It is the uninterrupted results of developing the situation that enables the UA commanders and leaders to

always be several cycles ahead of the enemy in the action-reaction-counteraction rotation when forces are joined or are about to be joined. The ability to outpace the enemy in this sequence establishes overmatch and underpins the UA versatility to conduct force on force combat by avoiding attrition while defeating the enemy in detail. The difference between the UA and other army combat formations is the ability to continuously develop the situation along with other tactical concepts while on the move. Conducting a succession of tactical concepts is slow, cumbersome, and often creates opportunities for the enemy. Conducting several tactical concepts concurrently enables freedom of action, momentum and tempo, and puts the enemy in the horns of tactical dilemmas. This coupled with technology provides the overmatch necessary to destroy the enemy both physically and psychologically.

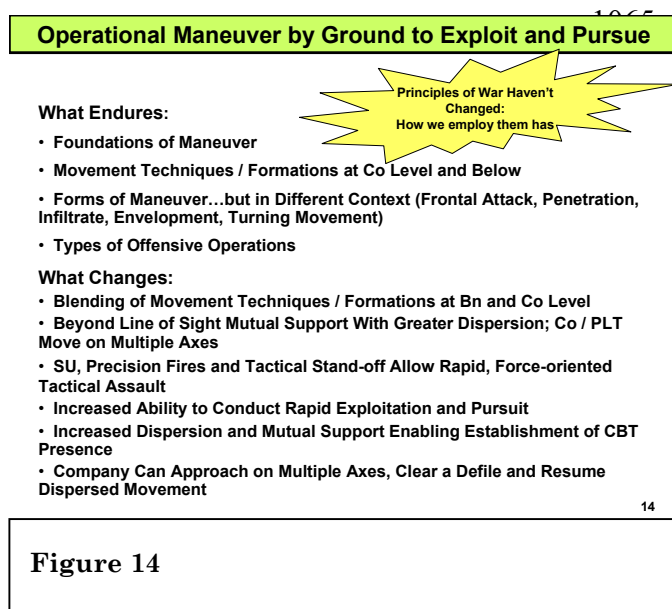
Simultaneously to developing the situation, the UA commander / leader must secure maneuver space, maneuver out of contact, and conduct tactical stand off from positions of advantage. Tactical stand off is required to set the conditions for freedom of action in the close assault. UA forces establish tactical stand off from positions of advantage from distances as small as possible from the enemy while minimizing exposure to enemy lethality. Integrating the terrain to mask enemy lethality while engaging the enemy beyond the inter-visibility line is another means of enemy attrition by UA overmatch. The conduct of tactical stand off can be the tactical assault as the maneuver elements move and fire, while dominating the battle space without massing or exposing the force while the UA destroys the enemy using multiple approaches and the combination of LOS and BLOS engagements. In conducting tactical stand off the UA must own and manage the low altitude airspace within its zone of action. This provides a multidimensional dilemma for the enemy and enables the UA to employ its manned and unmanned sensors and fires in this space.

Defeating the enemy in detail may not always occur by moving in and out of engagements employing tactical standoff combined direct fire engagements. Even with enhanced situational awareness targeting and striking dismounted enemy from tactical stand off is not always possible. The enemy can seek sanctuary in towns challenging our rules of engagement, use complex terrain to protract our efforts, and can achieve limited tactical surprise employing asymmetric tactics such as small RPG ambushes. These situations can pose significant threats to the UA's ability to prosecute and decisively destroy the enemy.

Situation: The UA experienced initial success against enemy forces in the AOR, defeating the Icheri Sheher Brigade during the attack into Baku. ANFAR forces, which attacked across the border, seized Agdam, and

continued eastward in an attempt to relieve the beleaguered Icheri Sheher Brigade. Surprised by the rapid defeat of forces in Baku, they suddenly found themselves in an exposed position in the wide valley between Agdam and Baku. Aware that US forces were mounting an operation to secure Agdam and restore the border, ANFAR forces began a delaying operation, designed to buy time for establishing a defense of Agdam while slowing and inflicting casualties on the attacking US force. Keys to their hopes of success were preservation of the delaying force and effective use of target acquisition systems linked to long-range artillery systems.

Mission: 1st UA Brigade was ordered to conduct rapid simultaneous exploitation and pursuit operations along multiple axes to destroy through integrated fire and maneuver, and tactical assault those dislocated enemy forces moving towards Agdam in order to restore stability and sovereignty to the region.



Conduct of the Operation: In this scenario, the UA conducts a pursuit operation designed to maintain pressure on delaying forces, dislocate them, and force them into a battle while moving through open and rolling terrain so they could be destroyed by assault. To minimize his vulnerability to the enemy's long-range artillery systems, the commander planned to move his brigade dispersed on multiple axes while fighting an aggressive counter-

reconnaissance effort. The result was near autonomous operations by each battalion, a common operating picture enhanced by situational awareness and networked fires ensured the force remained interdependent and mutually supporting. Even though dispersed across an area some 50km wide, the inherent mobility of the force and the flexibility and agility created by the advanced C4ISR and collaborative planning environment ensured he had the ability to focus the combat power on decisive points at a time of his choosing.

Required Capabilities for Tactical Concepts

- **Lethality**
 - Assured First Round Kill / or 4 X 8 Hole
 - LOS/BLOS KE Rapid Fire Kill on the Move
 - Precision Long Range Destructive Fires, Close Fire Support on Demand
 - Non-Lethal Effects Create Dilemmas for the Enemy
- **Survivability**
 - Situational Understanding, Slew to Cue Avenge Kill
 - Active and Passive Protection Against KE / CE
 - Detect Mines and Booby Traps at Standoff
 - Ground and Vertical Sensors That Are Acoustic, Seismic, Magnetic, Thermal, Chemical, LADAR, and Radar Detectors
- **Mobility**
 - C130 Crucible
 - Assured Mobility, over Varied Terrain, with Speed and Precision
 - Thermobaric Munitions to Destroy Mines at Standoff

13

Figure 15

1105

the enemy would use to establish defenses, obstacles, and ambush sites. Based on suspected enemy locations and his scheme of maneuver, the commander selected battalion axes that minimized exposure to enemy fires and directed the employment of reconnaissance assets. The embedded reconnaissance assets, to include the aviation detachment, developed the situation before contact and provide close support to the maneuver elements. The surveillance and reconnaissance sensors, and linkage of capabilities to special operational forces (SOF) were brought to bear on areas where he expected to find enemy forces. Using embedded planning tools, the staff integrated the inputs of sensor data from echelons above the UA brigade into their scheme for the employment of the brigade's ISR assets, ensuring they satisfied the commander's critical intelligence requirements (CCIR) while maximizing the layered effects of the sensor network.

One of his critical requirements was locating and engaging the enemy's long-range artillery assets, such as the Purga (range of 60km). Using the planning tools embedded in their systems, the staff was able to determine where space- and air-borne sensors of echelons above the UA were already directed and, as a result, were able to identify areas for reconnaissance by the UA's own assets. Based on the range of the Purga (60km), they established a scheme of ISR employment that ensured sensor coverage of potential locations within 60kms of the brigade's elements and ensured that these systems were given high priority in the unit's attack guidance matrix.

Also as part of his shaping operation, the commander established a number of engagement areas on the approaches to Agdam where he could use UE and joint fires, his own attack aviation and long-range fires (BLOS/NLOS)

Using embedded en-route mission planning and rehearsal tools, the commander and his staff conducted their intelligence preparation of the battlefield and military decision-making process using agile tactical command posts to facilitate battle command on the move. Through the use of a common operating picture enhanced by UE and Joint assets, the commander was able to identify potential locations that

1131 to isolate withdrawing forces within the battlespace. By isolating the city
1132 from the delaying forces which were his immediate objective, he denied them
1133 access to the sanctuary offered by a defense within the city and created the
1134 conditions for their defeat in detail in the more open terrain along the
1135 approaches to the city.

1136 As the UA brigade's aviation detachment and the reconnaissance assets
1137 of the combat battalions located enemy systems withdrawing towards Agdam,
1138 the brigade used access to long-range UE and joint force assets, all integrated
1139 into the system of networked fires, to engage them from tactical stand-off.
1140 Engaging these systems, through a virtual sensor-to-shooter link, separated
1141 the enemy from his supporting fires while protecting friendly forces from
1142 these lethal systems. Direct communications between the pilots of Air Force
1143 and Navy aircraft operating in the area and the reconnaissance assets that
1144 designated the targets ensured effective engagements while eliminating the
1145 risk of fratricide.

1146 As the UA brigade used its aviation assets and the reconnaissance assets
1147 of its battalions to develop the situation out of contact, the commander saw an
1148 opportunity to air-ground teaming through the integrating precision CAS to
1149 envelop the delaying enemy force, putting it into position to destroy enemy
1150 forces that were dislocated by the remainder of the brigade as it maintained
1151 pressure on the withdrawing force. Combined with the effects of massed
1152 precision fires, the brigade's scheme of maneuver posed a dilemma for the
1153 enemy – if he massed for an effective defense, he would be destroyed by
1154 concentrated fires and assault; if he dispersed and maneuvered away, he
1155 would be destroyed by precision maneuver that isolated and killed him with
1156 long-range fires.

1157 The UA Brigade develops the situation in its zone of action executing the
1158 counter reconnaissance fight, tactical movement and maneuver, synchronizing
1159 fires in support of maneuver, and integrating external fires in support of
1160 maneuver. The robust capabilities of air and ground manned and unmanned
1161 reconnaissance coupled with the overmatching fires provides unique
1162 synergistic capabilities enabling the battalions to maneuver out of contact
1163 while developing the situation in the zone of attack unfolds. The
1164 reconnaissance efforts identifies mobility corridors, targets enemy collection,
1165 high pay off targets, provides critical sensor to shooter links, and updates the
1166 COP with accurate BDA. The sensor to shooter links must include organic,
1167 UE, Joint, and coalition fires. Each layered sensors and fires elements
1168 provide the suite of effects necessary to attrite the enemy without the enemy
1169 doing so to the unit of action.

1170 The rapid maneuver enabled by fires serves several purposes. First the
1171 enemy's ability to conduct effective combat operations is diminished by

employing precision fires within a compressed time. Engaging the enemy in a very compressed time magnifies the suppressive effects on the enemy. Secondly, the savvy commander identifies targets of the greatest systematic value and uses his situational understanding with the technology of a layered and fused sensor system to achieve multiple simultaneous fires rather sequentially. The greatly expanded ability to acquire, track, and process targets at greater ranges is the enabler to strike many discrete targets. This comprises the essential elements of simultaneity when synchronized with maneuver. Thirdly, stripping away options and eliminating the enemy's ability to influence the unit of action's scheme of maneuver enhances survivability. Finally, a rapid tactical and operational tempo is derived from this combination of concentrated fires and immediate, violent exploitation maneuver. A rapidly decisive engagement creates conditions for even more decisive success in the next engagement. The cascading effects of iteratively and relentlessly firing and maneuvering simultaneously compound the enemy's problems and leads to decisive results more quickly. The more rapidly the success an engagement is exploited, the more rapidly decisive battle results are achieved.

The unit of action with its potent mobility capabilities is able to conduct rapid, decisive tactical movements and maneuver across most terrain supported by integrated/synchronized fires to facilitate the close combat engagements. Developing the situation enables the battalions and companies to secure maneuver space, positions of advantage, conduct tactical standoff, and assault.

Effective situational development operations facilitate the commander's ability to aggressively execute his scheme of maneuver and transition from one engagement to the next. Putting maximum combat power at a point of maximum advantage in the battle space with respect to the enemy's war fighting capacity--maneuver then enables fires. From positions of advantage achieved through

maneuver, commanders are able to place fires on the enemy to eliminate or marginalize his capabilities. A position of advantage forces the enemy to move or face

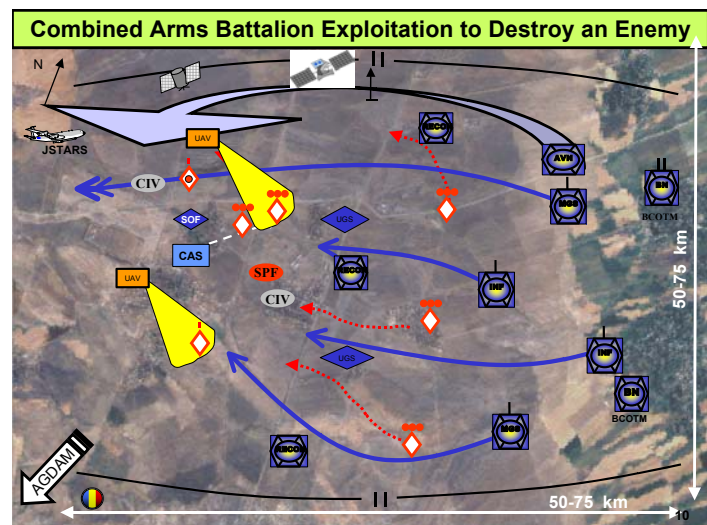


Figure 16

continued attack and ultimate defeat through tactical assault. When the enemy does move, he likely exposes greater vulnerabilities, which become subject to attack by other army, joint, and coalition fires in the next cycle of trade offs between fires and maneuver—opportunity created and seized through rapid synchronization and execution of combinations of fires and maneuver. Developing the situation creates opportunities to prosecute engagements decisively and transition. The unit of action continuously conducts maneuver and fires in and out of contact from positions of advantage, tactical stand off and assault by rapidly transitioning in out this tactical cycle.

As the brigade advanced rapidly, close on the heels of the delaying force, the aviation detachment identified an enemy defensive position 60kms in advance of the UA's lead elements. The position was carefully selected to protect the withdrawing force and overlooked the best approaches to a river crossing along their line of withdrawal. Knowing that the battalion would close on the reported location in just over an hour, the aviation unit used its sensors to identify specific target locations within the enemy position. Other sensors, mounted on unmanned aerial vehicles (UAV), were diverted from other areas to further develop the common operational picture. Their observations revealed that the position was well defended by a combination of dismounted infantry elements, Draega tanks, and Garm missile launchers in hastily prepared survivability positions. Minefields protecting the position from direct assault were still incomplete and operators of the advanced sensors on UAVs observing the area located several exploitable gaps and ensured they were portrayed on the common operational picture (COP).

Quickly adapting his scheme of maneuver to the developing situation, the battalion commander directed his reconnaissance assets to locate river crossing sites that were beyond the line of sight of the defensive position. When one was located north of the defensive position, the battalion commander used his embedded collaborative planning tools to locate an ideal engagement area on routes the defenders would probably use as they were dislodged from their positions. He directed Alpha company to cross north of the river and occupy positions that allowed them to place direct fires on defending forces as they entered the engagement area. Teamed with RAH-66 Comanches from the UA's aviation detachment, the company-sized air-ground team brought the integrated fires of the UA's network to bear on the withdrawing forces.

A second company was directed to cross the river some distance south of the defensive position and occupy positions that forced the withdrawing enemy towards the engagement area. The remaining two companies were

1253 ordered to attack the enemy position and compel the defending forces to
1254 withdraw, enabling their defeat in detail.

1255 The battalion commander used his embedded collaborative planning
1256 system to update his scheme of maneuver and digitally transmitted the
1257 supporting graphics to all elements of the battalion. Simultaneously, he used
1258 voice communications to ensure his subordinate commanders understood his
1259 intent.



Figure 17

1277 audible alert in his earphones to ensure he was aware of the obstacle that lay
1278 on his route. Using the same planning tools, he quickly determined new
1279 routes for each of his platoons, directing them towards bypasses around the
1280 minefield, using line-of-sight evaluation tools to ensure the force stayed out of
1281 the enemy's line-of-sight as they maneuvered around the flank of the
1282 defending forces.

1283 Moments later, another audible
1284 alarm alerted the commander to the
1285 appearance of two new icons on his
1286 screen, indicating the arrival of
1287 additional enemy forces. Each icon
1288 represented a single vehicle, flagged
1289 with additional icons that indicated the
1290 direction and rate of their movement.
1291 They were moving west, apparently in
1292 an attempt to reinforce the forces in the
1294 defensive position. Almost as quickly as

ANNEX F UA O&O VIGNETTES

1260 Still 30 km from the
enemy position, the alpha
company commander
reviewed the continuously
updated common
operational picture (COP)
for obstacles along his
intended axis of advance.
While he watched, a newly
identified minefield was
posted to the display.
Because he had already
used his embedded
planning tools to sketch
his planned route on the
display, the appearance of
the minefield caused an

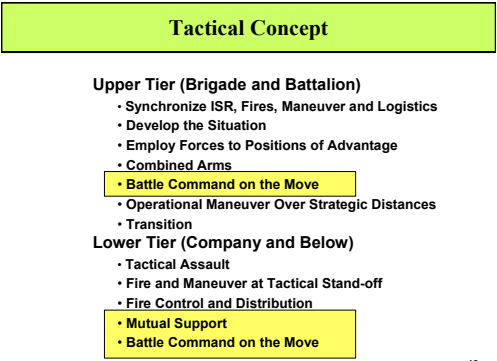


Figure 18

1295 they appeared, they faded to black, indicating they had already been
1296 destroyed by the same Comanche whose sensors had located and identified
1297 them.

1298 When they closed to a range of 12 km, the battalion's mortars began the
1299 attack on the defensive position. Pulling pin-point targeting data from the
1300 common operational picture, they delivered precision munitions aimed
1301 directly at the vehicles defiladed in the survivability positions within the
1302 enemy's defense. Their lethal, top-attack munitions quickly destroyed all but
1303 five vehicles.

1304 Still too far away to directly observe the enemy position, the company
1305 commander used the split screen option on his display to watch both the map
1306 display of the common operational picture and live-video feed from the
1307 unmanned aerial vehicles observing the enemy's position. He watched as the
1308 five surviving vehicles, three Draega tanks and two Garm missile launchers,
1309 left their positions to flee towards Agdam, leaving the remaining dismounted
1310 defenders easy prey for the mounted supported by dismounted combined arms
1311 assault that was to follow.

1312 The icons on his common operational picture display indicated the
1313 fleeing vehicles had taken an unanticipated route and were going to bypass
1314 the planned engagement area. The commander quickly redirected the UAV to
1315 reconnoiter a route that his display indicated would allow his 3rd platoon to
1316 outflank the retreating vehicles while he pursued them with his remaining
1317 two platoons.

1318 With the reconnaissance of the UAV assuring the route was clear of
1319 obstacles, the 3rd platoon advanced rapidly and quickly overtook the fleeing
1320 enemy vehicles. Two of the enemy tanks were destroyed with direct fire while
1321 the platoon moved parallel to the fleeing enemy force, but the remaining three
1322 vehicles found cover behind a low ridge that separated the two forces. Using
1323 his embedded planning tools, the platoon leader quickly identified a position
1324 in advance of the moving forces that would give him clear shots. Accelerating
1325 to speeds of 60 km/h, the platoon darted in front of the enemy and was there
1326 waiting as they crested the ridge and employed revenge kill capability to
1327 ensure the destruction of these enemy forces

1328 With the last of the enemy vehicles confirmed destroyed, the platoon
1329 leader ordered the platoon into a traveling over watch formation and
1330 continued movement to the west. Though the remainder of the company was
1331 still beyond his direct observation, his common operational picture (COP)
1332 display assured him they were moving on parallel routes and that he was well
1333 within the supporting range of their fires as well as those of the battalion's
1334 mortars.

As they moved towards Agdam, embedded logistics planning tools that had monitored the unit's ammunition usage in the recent engagement automatically transmitted an update to the battalion's logistics center. This constantly updated flow of information enabled the battalion staff to effectively plan en-route resupply operations that allowed the battalion to maintain its momentum as they continued their pressure on the delaying enemy forces.

At the direction of the company commander, the platoon leader detoured his force into a small village that lay along the platoon's line of march towards Agdam. Using embedded language training tools, he learned from residents of the village that enemy forces had used dismounted forces to occupy the next village along their intended line of march, and that special purpose forces were hiding in the forested areas of the valley, probably

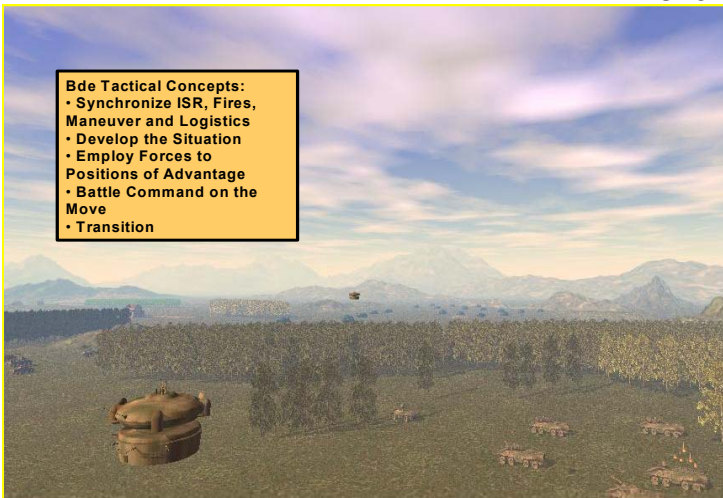


Figure 19

observing for long-range artillery assets located closer to Agdam. Using his collaborative planning tools, the platoon leader added the suspected defensive position to the common operational picture. He used automated reporting software to draft and transmit a text message of his conversation with the villagers to all forces operating within the area.

Based on the platoon leader's report, the battalion staff redirected

reconnaissance assets to confirm the information and to locate specific targets within the village. As the positions of the defending forces became clear, the commander and his staff began their planning for a company-sized attack on the village. To minimize the risk to the civilian populace, their attack would use mounted forces to isolate the village while dismounted forces oriented on destroying enemy forces within the village. Even as that attack unfolded, the remainder of the battalion continued its pursuit of other withdrawing enemy elements, insuring the enemy's defeat in detail.

Tactical stand off is the preferred method for dominating the zone of action and ultimately winning the engagement. Stand off distances must be as small as possible to minimize exposure while assaulting. Companies

exploit cover and concealment provided by inter-visibility lines, foliage, and manmade structures. Exploiting the terrain and employing BLOS is the essence of maneuver enabled by fire and fire enabled by maneuver. Using lethality to defeat the enemy while closing the distances inherently increases survivability and increases friendly freedom of action while denying the enemy the same. Using terrain, employing lethality and moving simultaneously denies the enemy the ability to act. The enemy is constantly under fire with both NLOS and BLOS, which limits effective targeting and attacking of the companies in the unit of action. The establishment of the relative fire and maneuver in this cycle enables the companies and platoons to execute a devastating, short duration ("3 second rule"), lethal precision engagements that cannot effectively be countered by the enemy. Minimizing the tactical stand off assault distance enhances the effectiveness of the close assault by closing with enemy while he is still recovering from the stand off fires. Mounted maneuver is the desired compliment to tactical stand off because it enables tempo and momentum. However, the physical, temporal, and enemy situations often require a combination of mounted and dismounted maneuver. The qualities of tactical stand off combined with assault cycling between mounted and dismounted maneuver not only decisively complete the engagement but sustain the momentum. It is in this sequence that exploitation and pursuit are created and mounted ground and air lethality can defeat the enemy in detail.

The Brigade and Battalions seek to defeat the enemy in detail with precisely executed tactical stand off fires and maneuver that overmatch the enemy in range, precision, lethality, and swiftness of attack through assault. This is accomplished by employing reconnaissance assets, NLOS, and aerial close attack support. Area and precision lethal and non-lethal capabilities suppress, disrupt, and destroy enemy units and systems. Munitions and other capabilities create lethal and non-lethal obstacles fix and separate enemy forces. Tactical stand off engagements enable assault elements to fire from standoff over intervening terrain, continuing assault fires throughout the attack. Combining tactical stand off with the assault dramatically affects the enemy's ability to survive. The enemy systems must deal with a combination of aerial assault, ground assault, direct KE or KE/CE top down kills on his systems and fortifications. The combination of these effects overcomes the ERA or APS suites technologies designed to survive direct or top down but not both. The fight in the zone of action is waged using tactical stand off supported by the close combat assault, assault supported by tactical stand off, or a balance combination of both. Zones of action are established over moving enemy forces or enemy in open, rolling terrain, essentially as extended ambushes. Organic capabilities extend the unit of action's focus and reach well beyond the inter-visibility lines that limit tactical combat today.

This enables the unit of action to find, isolate, and destroy the tactical structure of the enemy force with an expanded zone of action. Holistic force protection and lethality, enabled by the C4ISR network, interconnectivity, and sensor cross-cueing increases the force effectiveness of the unit of action. This construct provides the capability to enter in combat and attrite the enemy without being attritted.

At the moment of employing the unit of action, the brigade must focus its attention to developing the situation and combat power to a particular set of engagements. Integrating external capabilities (ISR, fires, communications) speeds success in the zone of action by reducing the unit of action resources required to win, thus increasing the stamina and endurance of the unit of action to conduct more tactical engagements without a major transition. The brigade's ability to integrate external resources with internal capabilities not assures decisive outcomes but enables the brigade to conduct simultaneously multiple tactical concepts, collaborate, increase tactical and operational flexibility while constraining those capabilities of the enemy.

The unit of action operates dispersed throughout the zone of action and can still execute synchronized and simultaneous tactical concepts. Maneuver elements provide mutual support through information sharing, maneuver, and fires. Manned and unmanned ISR in the zone of action rapidly update the changing situation for all fighting elements and facilitate quick transitions from mounted to dismounted operations. Networked teams rapidly coordinate actions, focus efforts, exploit each other's actions, and mass against difficult enemy positions. Fire control and distribution through out the engagement using the network can precisely lift and shift forward of the fighting elements. This provides in essence direct fire overmatch in tactical engagements in all types of terrain. Overland mobility, coupled with the network and very effective small units, enables the battalion and brigade to use complex terrain to its advantage and achieve surprise in the tactical engagement.

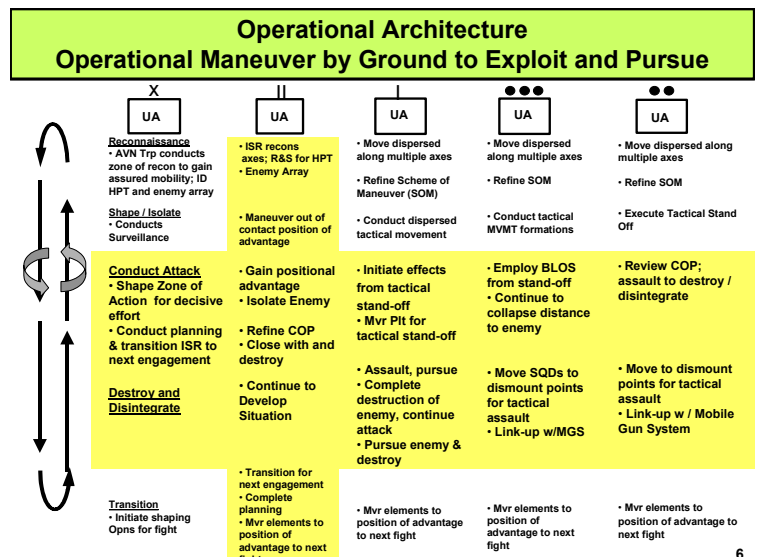


Figure 20

The nature of tactical operations will not change. The conduct of these operations will change with the unit of action. The unit of actions will execute tactical concepts crucial to a decisive outcome. The critical aspects will incorporate enduring qualities of proven principles over time while changing how we conduct fire and maneuver, fire and movement, assault, develop situational understanding, and integrate information into our tactical concepts.

What endures? What changes?

WHAT ENDURES:

The principles of war haven't changed, how we employ them has. We will no longer be attrition based, we will be enabled by information allowing for increased speed and movement, lighter / smaller logistical footprint

Forms of Maneuver and Offensive Operations. The five forms of maneuver: envelopment, turning movement, infiltration, penetration and the frontal attack; and offensive operations: movement to contact, attack, exploitation and pursuit remain fundamentally the same with regards to their employment within the battlespace. The ability for the commander to engage his forces in dynamic and rapidly paced operations within today's constructs remains consistent when looking at tomorrow's maneuver and offensive operations.

Movement techniques / formations at company level and below remain similar with regards to employment; however, the space for which the company operates in may expand based on new technological advances.

WHAT CHANGES:

Movement techniques / formations at battalion and company level will blend with the enhanced capability of battle command on the move, enabled through the use of sensors (unmanned and manned), information superiority provided by UE and joint capabilities (terrain, weather, mines/booby traps, etc), fires employed by system of systems networked from sensor to shooter.

Beyond line of sight (BLOS) along with a COP will allow for mutual support from adjacent units, thus enabling a greater dispersion of equipment and personnel allowing for company and platoon movement along multiple

axes. This ability to simultaneously maneuver with enhanced mutual support enables the massing of fires and effects without the massing forces. Company's can approach on multiple axes, clear defiles and resume dispersed movement. The enhanced capability of air-ground teaming provides an additional 3D effect, which influences the tempo and reach capability of the maneuver elements.

Situational understanding, precision fires and tactical stand-off will allow rapid force oriented tactical assault. The commander will have an unprecedented ability to identify the enemy's composition and disposition through layered networked sensors allowing for precision maneuver and targeting.

Enabled by information, speed and movement, the increased ability to conduct rapid exploitation and pursuit is achieved; thus reducing today's techniques of expending the preponderance of effort on the movement to contact offensive operation. This allows for a focused effort of equipment and resources to attack and pursue to the final defeat of the enemy.

1.3.1 RAPID ADVANCE TO ENEMY CENTER OF GRAVITY

TBP

1.3.2 DISMOUNTED AIRMOBILE / AIR ASSAULT ENABLED BY MOUNTED FORMATION IN RESTRICTED TERRAIN

TBP

1.3.3 DISMOUNTED OPERATIONS TO CONDUCT RAID ON DECISIVE POINT IN JUNGLE

TBP

¹ SoRC: B-4, C-5

² SoRC: B-4, C-5

³ SoRC: A-1,

⁴ SoRC: A-1,

⁵ SoRC: B-4, C-5

⁶ SoRC: B-4